NØRTEL
NETWORKS

Passport

Installation

Guide

241-5101-200

Passport 8250
Installation
Guide

Publication history

October 1999

R2.2 Standard
Commercial availability.

Contents

About this document

This document explains how to install the Passport 8250 device.

This document uses the terms DS-1/E1 and STM-1/OC-3. The term DS-1/E1 is for information that applies to both DS-1 and E1 interfaces. The term STM-1/OC-3 is for information that applies to both STM-1 and OC-3 ports. When information is for a specific interface or port, the individual designation is given.

Who should read this guide

You should read this document if you are responsible for performing the following tasks:

- Installing the Passport 8250 device.

- Replacing hardware components.

What you need to know

You need to know the following information:

- ATM networking principles.

- Electrical and physical safety procedures and standards.

How this guide is organized

This guide is divided into the following sections:

- "Passport 8250" (page 15).

- "Preparing for the hardware installation" (page 21).

- "Installing the Passport 8250 device" (page 25).

- "Configuring the Passport 8250 for operations" (page 37).

Conventions

There are documentation and symbol conventions used in this document.

Documentation conventions

There are a number of documentation conventions you should know about.

- `nonproportional spaced plain type`

  Nonproportional spaced plain type represents system generated text or
  text that appears on your screen.

- **`nonproportional spaced bold type`**

  Nonproportional spaced bold type represents words that you should type
  or that you should select on the screen.

- `[optional_parameter]`

  Words in square brackets represent optional parameters. The command
  can be entered with or without the words in the square brackets.

- `<general_term>`

  Words in angle brackets represent variables which are to be replaced with
  specific values.

- UPPERCASE, lowercase

Uppercase and lowercase letters in commands and parameters must be
matched exactly.

- |

  This symbol separates items from which you may select one; for
  example, ON|OFF indicates that you may specify ON or OFF.

- ...

  Three dots in a command indicate that the parameter may be repeated more than once in succession.

Symbol conventions

The following are samples of caution and warning conventions used in this document:

> **WARNING**
> **This warning informs you of risk of personal injury.**

> **CAUTION**
> **This caution informs you of risk of service interruption or equipment damage.**

> **CAUTION**
> **This caution alerts you to the need to wear a grounded antistatic wrist strap or equivalent protection to avoid damaging electronic parts.**

Related documents

Documents related to the Passport 8250 are available from Passport and NMS documentation suites.

Passport documents

See NTP 241-5101-201, *Passport 8250 Command Line Interface Guide* for information on how to monitor and configure the Passport 8250 device using the Passport 8250 command line interface (CLI).

NMS documents

See the following NMS documents for information on how to monitor and configure the Passport 8250 device using the NMS Passport 8250 tools, integrating the Passport 8250 device into the NMS environment, and using backup and restore:

- NTP 241-6001-028, *NMS Passport 8250 Tools Guide*.

- NTP 241-6001-110, *NMS Passport 8250 Integration Guide*.

- NTP 241-6001-807, *NMS Backup and Restore User Guide*.

Nortel support services

For information on training, problem reporting, and technical support, contact your Nortel Networks customer representative.

Chapter 1
Passport 8250

This section describes the Passport 8250 device. You can view the following topics in this section:

Passport 8250 functions

The Passport 8250 is an Integrated Access MUX, a rugged, high-density unit that provides a seamless bridge between traditional voice networks and ATM networks. The Passport 8250 multiplexes TDM traffic - voice, video, IP, frame relay, X.25, and SNA - on DS-1/E1 trunks to OC-3c/STM-1 fiber trunks (ATM over SONET/SDH). Using ATM Forum AAL1 circuit emulation standards, traditional voice network traffic (dial-up Internet access, modem data traffic, telephony, and more) is seamlessly transported over the efficient, high-bandwidth ATM network. Deployed at either the service provider setting or customer premises (campus, apartment building, or office center, for example), the high-density unit supports up to 48 DS-1/E1 ports, up to 336 DS-1s/E1s in a single frame.

See "Passport 8250 device" (page 16) for an illustration of the Passport 8250.

Figure 1
Passport 8250 device

The Passport 8250 can be used for the following applications:

- Providing medium to high density DS-1 or E1 ingress to an ATM carrier network.

- Providing medium to high density DS-1 or E1 ingress to an ATM wireless network.

- Acting as a traffic bridge between ATM network and TDM Trunks.

Passport 8250 hardware

The Passport 8250 device contains the following hardware components:

- Base chassis

- "Board modules" (page 17)

- "Communication ports" (page 18)

- "Dual power supply modules" (page 18)

- "Fan module" (page 18)

See "Passport 8250 front panel" (page 17) for an illustration of the hardware components.

Figure 2
Passport 8250 front panel
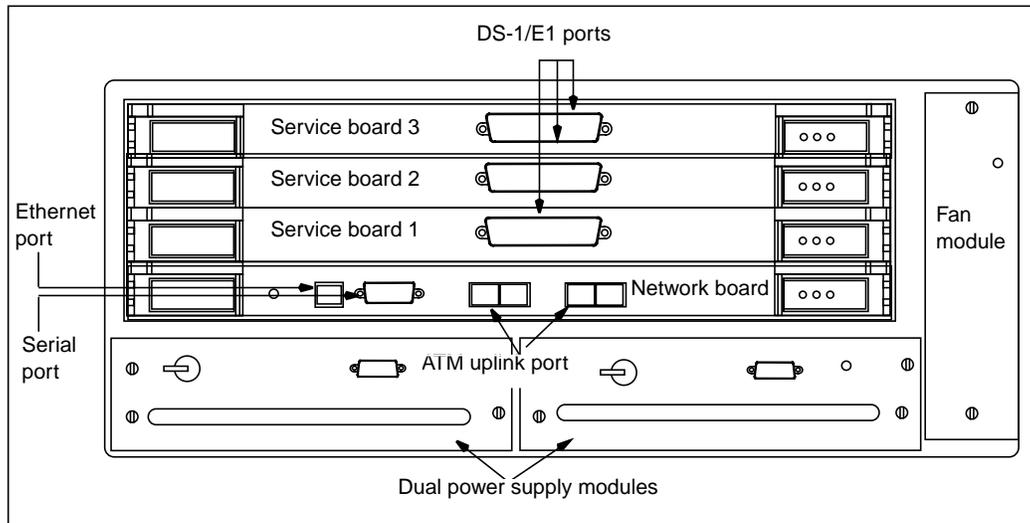
Board modules

The Passport 8250 device has a field-replaceable network board and up to three field-replaceable DS-1/E1 service boards.

Network board

The network board is a single-mode or multi-mode integrated dual trunk. The network board controls the Passport 8250 device and contains the communication ports.

DS-1 and E1 service boards

The Passport 8250 device can hold one, two, or three DS-1 or E1 service boards. Service boards send and receive DS-1/E1 signals and convert between ATM cells and DS-1/E1 traffic. Each service board has 16 physical DS-1/E1 ports.

Communication ports

The communication ports, which are located on the network board, include a serial port, ethernet port, and redundant ATM uplink port.

Serial port

The serial port connects the Passport 8250 device to a local host using a RS-232 cable. Using a standard terminal emulation software application running on the local host, you can directly access the command line interface (CLI).

Use the serial port to configure the Passport 8250 device for operations before the Passport 8250 device is connected to your network.

Ethernet port

The ethernet port connects the Passport 8250 device to a local area network (LAN) using a RJ-45 cable. You can use a Telnet session on a remote host to remotely access the CLI, provided the Passport 8250 device already has an Internet protocol (IP) address.

Use the ethernet port to configure the Passport 8250 device while the Passport 8250 device is connected to your network and to communicate with other devices within your network.

Redundant ATM uplink port

The ATM uplink port connects the Passport 8250 device to the ATM network using a STM-1/OC-3 single-mode or multi-mode fiber optic cable. The ATM uplink port has two physical connectors and one connector is configured as the primary port that listens for incoming signals from the ATM network.

Dual power supply modules

The Passport 8250 device uses two field-replaceable 10 amps, -10 V DC power supply modules. Each power supply module has a 3w3-D connector and independent power feed.

If a power supply module fails, the Passport 8250 device can operate temporarily using one power supply module and one power supply filler pack.

Fan module

A field-replaceable fan module cools the internal components of the Passport 8250 device.

Passport 8250 software

You do not have to order software for the Passport 8250. The Passport 8250 comes preloaded with the operating system and the applications it needs. Base trunking software is included with the integrated trunk/control card (network board), and the CES software with the access modules (service boards), so no service support is required.

You can use the Network Management System (NMS) software to manage the Passport 8250 devices. For information on installing and configuring the NMS software, see NTP *241-6001-110, NMS Passport 8250 Integration Guide*.

Software compatibility

Passport 8250 release 2.2 can be used with the following software:

- Passport software that is release 5.0 or higher.

- NMS software that is release 11.1 or higher.

Related documents

Documents related to the Passport 8250 are available from Passport and NMS documentation suites.

Passport documents

See NTP 241-5101-201, *Passport 8250 Command Line Interface Guide* for information on how to monitor and configure the Passport 8250 device using the Passport 8250 command line interface (CLI).

NMS documents

See the following NMS documents for information on how to monitor and configure the Passport 8250 device using the NMS Passport 8250 tools, integrating the Passport 8250 device into the NMS environment, and using backup and restore:

- NTP 241-6001-028, *NMS Passport 8250 Tools Guide*.

- NTP 241-6001-110, *NMS Passport 8250 Integration Guide*.

- NTP 241-6001-807, *NMS Backup and Restore User Guide*.

Chapter 2
Preparing for the hardware installation

This section provides the following procedures for preparing for installing the Passport 8250 device:

1   "Selecting an installation site" (page 21)

2   "Unpacking the Passport 8250 shipment" (page 22)

3   "Taking inventory of the Passport 8250 shipment" (page 22)

4   "Getting the tools to mount the chassis in a rack" (page 24)

Selecting an installation site

Select a site that meets the following requirements:

- Access to a 10 Base-T ethernet drop.

- Dry and dust-free area.

- Temperature between 0 and 50 C.

- Humidity does not exceed 85 percent.

- Power outlets meet power requirements and are within 1.8 meters (6 ft.) of the installation location.

- Restricted access location, which is defined as:

  — Access can only be gained by qualified service personnel with the use of a special tool or lock and key or by users who have been instructed in the reasons for the restrictions applied to the location and know the security precautions that must be taken.

— Access is through the use of a special tool, or lock and key, or other means of security, and is controlled by the authority responsible for the location.

> **CAUTION**
> **Risk damage to the equipment**
> You risk damage to the equipment if the installation site fails to meet all environmental considerations.

Unpacking the Passport 8250 shipment

Move the Passport 8250 package to the installation site to unpack the shipment. If any equipment is damaged, contact your Nortel Networks representative.

1   Cut the tape that seals the top flaps, taking care not to cut into the contents of the box, and fold back all four flaps.

2   Remove foam and any other packaging material from the top of the unit.

3   Lift the Passport 8250 unit from the box and place it horizontally on a flat surface.

4   Unpack any other equipment shipped with the unit.

5   Clear the unpacking area of all debris.

Taking inventory of the Passport 8250 shipment

After you unpack the Passport 8250 shipment, take inventory of the items using the "Inventory checklist" (page 23) to ensure you received all the items ordered. If you are missing an item, contact your Nortel Networks representative.

Note: NMS software and documentation are not included in the inventory checklist.

Table 1
Inventory checklist

Item	Options available	Code #
Chassis	One option available.	A0748182
Fan module	One option available.	A0760931
DS-1/E1 cables	DS-1 interface cable assembly, 10m DS-1 interface cable assembly, 20m DS-1 interface cable assembly, 30m DS-1 interface cable assembly, 40m DS-1 interface cable assembly, 50m E1 interface cable assembly, 10m E1 interface cable assembly, 20m E1 interface cable assembly, 30m E1 interface cable assembly, 40m E1 interface cable assembly, 50m	A0763467 A0763473 A0781132 A0781133 A0781134 A0781139 A0781140 A0781141 A0781142 A0781143
Power supply cables	DC power cable assembly, 10m DC power cable assembly, 20m DC power cable assembly, 30m DC power cable assembly, 40m DC power cable assembly, 50m	A0763481 A0781135 A0781136 A0781137 A0781138
Dual power supply	5 v and 3.3 v DC power module (2 required) Dummy power supply filler pack (optional)	A0761105 A0748191
Boards	network card (OC-3, single-mode) network card (OC-3, multi-mode) network card (STM-1, single-mode) network card (STM-1, multi-mode) 1, 2 or 3 service card (DS-1) 1, 2 or 3 service card (E1) dummy circuit card filler pack (required if ordered less than 3 service cards)	A0768073 A0760934 A0760946 A0780321 A0760951 A0760950 A0748198
Rack mounting kits	19" rack mounting kit NEBS rack mounting kit ETSI rack mounting kit	A0748199 A0748200 A0748201

Getting the tools to mount the chassis in a rack

To mount the chassis in a rack, you will need one or more of the following tools:

- 9.5 mm wide flat-bladed screwdriver for 19" or ETSI rack installation.

- 10 mm A/F nut driver for NEBS rack installation.

- Pozidrive screw driver suitable for a M4 screws for assembling the mounting brackets to the chassis.

- Small flat-bladed screwdriver for securing the "D-type looking" screws.

Chapter 3
Installing the Passport 8250 device

This section provides the following procedures for installing the Passport 8250 device:

1   "Mounting the chassis in a rack" (page 25).

2   "Connecting cables to the ports" (page 29).

3   "Connecting the dual power supply" (page 33).

4   "Securing the cables to the rack" (page 35).

Mounting the chassis in a rack

The Passport 8250 device can be mounted on the following racks:

*   19 " rack. For details, see "Mounting the Passport 8250 device on a 19" rack" (page 26).

*   New equipment building system (NEBS) rack. For details, see "Mounting the Passport 8250 device on a NEBS or ETSI rack" (page 28).

*   European Telecommunication Standards Institute (ETSI) rack. For details, see "Mounting the Passport 8250 device on a NEBS or ETSI rack" (page 28).

Safety precautions

Mount the Passport 8250 device using the following safey precautions:

*   Do not place the device in direct sunlight, near warm air exhausts or heaters.

*   Do not place the device around water.

• Allow at least 2 inches of ventilation space on both sides of the device as illustrated in "Ventilation space" (page 26).

• Do not block the air flow around the device with cables. For details, see "Securing the cables to the rack" (page 35).

• Leave adequate space between units on a rack.

• Secure each device to the rack with appropriate mounting brackets.

Figure 3
Ventilation space
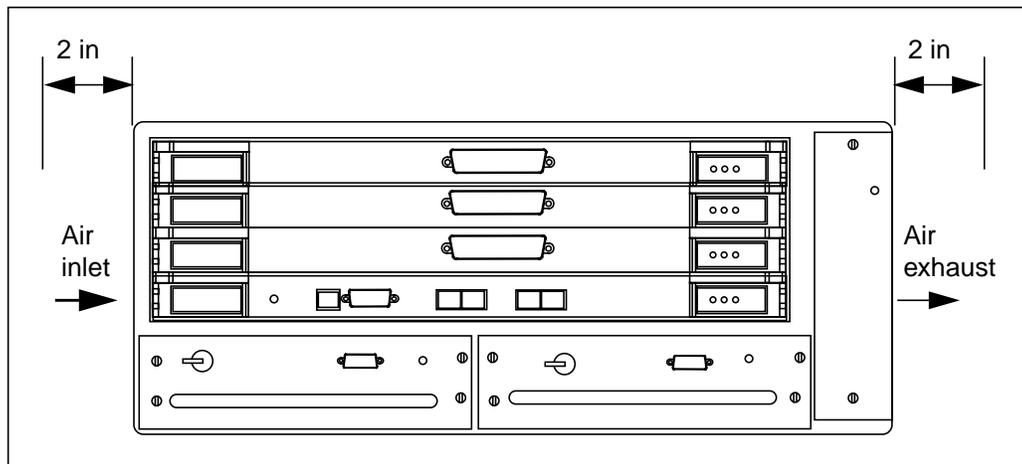
Mounting the Passport 8250 device on a 19" rack

1   Locate the bracket mounting holes on each side of the chassis.

2   Using a Pozidrive screw driver, attach 19" mounting brackets to each side of the chassis.

See "Attaching mounting brackets to chassis" (page 27) for an illustration of how to attach the mounting brackets.

3   Use two of the provided rack fixings to aid you in the initial location of the chassis within the rack.

4   Find the desired position for the chassis on the rack.

5   Using the four fixings provided, secure the unit to the rack.

See "Installing the chassis on a 19" rack" (page 27) for an illustration of how to install the chassis on the rack.

Figure 4
Attaching mounting brackets to chassis

Secure mounting
brackets to the unit
using the fixing
holes indicated
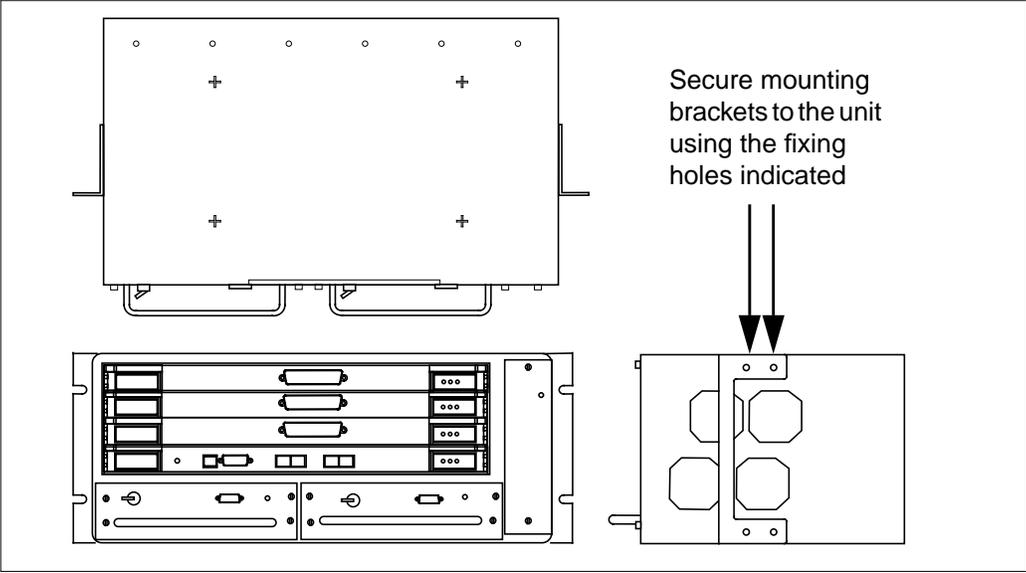
Figure 5
Installing the chassis on a 19" rack

Secure
the unit
to the
rack in
four
places

Allow a minimum of 2SU
(88.9 mm) above the unit for
cabling

Temporary
fixing for
installation
aid
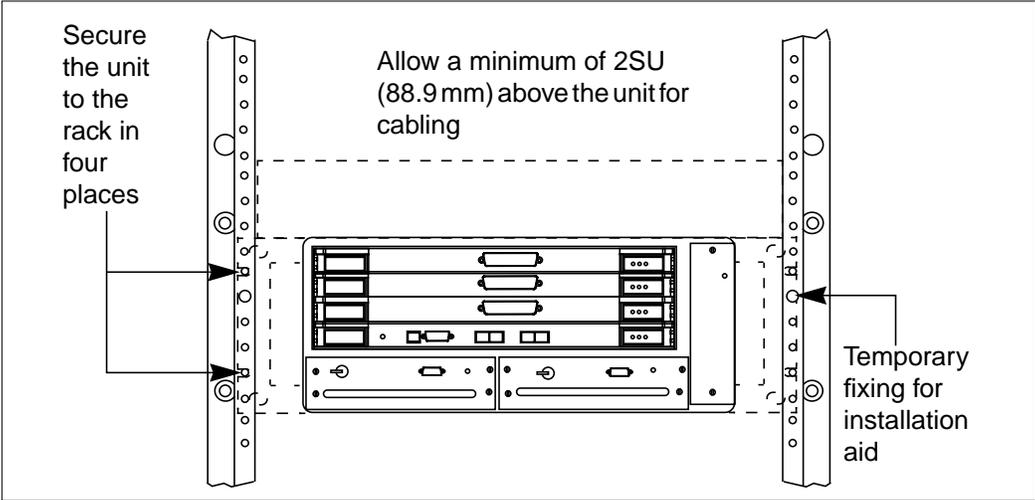
Mounting the Passport 8250 device on a NEBS or ETSI rack

1. Locate the bracket mounting holes on each side of the chassis.

2. Attach the mounting brackets to each side of the chassis using a Pozidrive screw driver.

   See "Attaching mounting brackets to chassis" (page 27) for an illustration of how to attach mounting brackets.

   Note: For the NEBS rack, use the NEBS mounting brackets. For the ETSI rack, use the ETSI mounting brackets.

3. Use two of the provided rack fixings to aid you in the initial location of the chassis within the rack.

4. Find the desired position for the chassis on the rack.

5. Using the four fixings provided, secure the unit to the rack.

   See "Installing the chassis on a ETSI or NEBs rack" (page 28) for an illustration of how to install the chassis on the rack.

Figure 6
Installing the chassis on a ETSI or NEBs rack
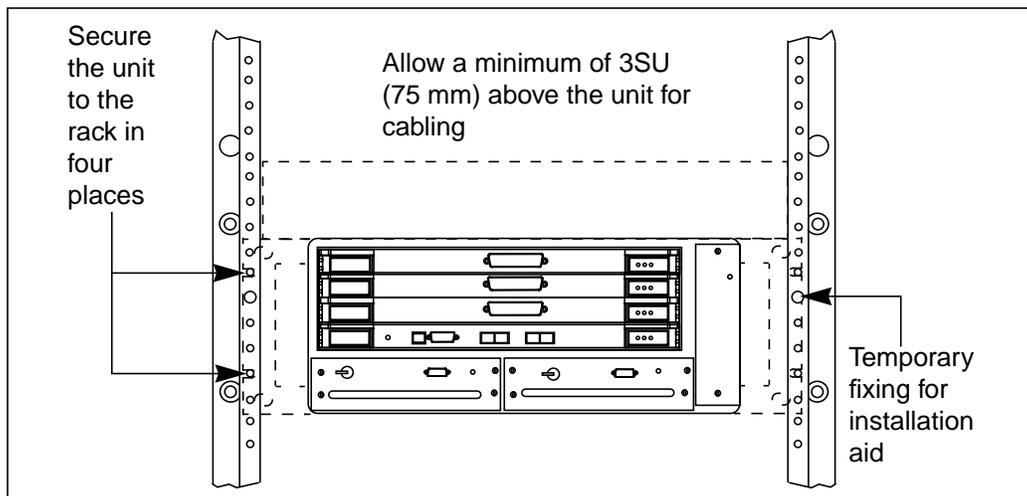
Connecting cables to the ports

You have to connect cables to the following ports:

- DS-1/E1 ports. For details on connecting cables, see "Connecting the DS-1/E1 ports" (page 29).

- Ethernet port. For details on connecting cables, see "Connecting the ethernet port" (page 31).

- Serial port. For details on connecting cables, see "Connecting the serial port" (page 32)

- ATM uplink port. For details on connecting, see "Connecting the ATM uplink port" (page 33).

Connecting the DS-1/E1 ports

> **WARNING**
> **DS-1 / E1 port connections**
> Do not connect the DS-1/E1 ports to exposed plant wiring or any other unprotected wiring which may be subjected to electrical mains contact or atmospheric discharges. Connect only to ports of other equipment designated as SELV circuits as specified in the equipment safety instructions.

1   Obtain the following equipment:

- For each DS-1/E1 port, twisted pair high density cable with male DB-78 connector. The AMP high density D subminiature 216158-1 or 748368-1 is the recommended connector.

- DS-1/E1 equipment, such as a PBX.

- Patch panel (optional).

Note: When you order the cable, please ensure that the cable numbering starts with number one.

2   Connect the DS-1/E1 cables to the DS-1/E1 ports located on the front panel of the Passport 8250 device.

The DS-1/E1 ports are female DB-78 high density connectors. For details on the DS-1/E1 pin assignments, see "DS-1/E1 pin assignment" (page 30).

3 Connect the other end of the DS-1/E1 cable to the far end.

Table 2
DS-1/E1 pin assignment

Description	Signal	Pin	Pin	Signal	Description
transmit tip port 0	TXTIPC0	1	40	RXTIPCO	receive tip port 0
transmit tip port 1	TXTIPC1	2	41	RXTIPC1	receive tip port 1
transmit tip port 2	TXTIPC2	3	42	RXTIPC2	receive tip port 2
transmit tip port 3	TXTIPC3	4	43	RXTIPC3	receive tip port 3
transmit tip port 4	TXTIPC4	5	44	RXTIPC4	receive tip port 4
transmit tip port 5	TXTIPC5	6	45	RXTIPC5	receive tip port 5
transmit tip port 6	TXTIPC6	7	46	RXTIPC6	receive tip port 6
transmit tip port 7	TXTIPC7	8	47	RXTIPC7	receive tip port 7
transmit tip port 8	TXTIPC8	9	48	RXTIPC8	receive tip port 8
transmit tip port 9	TXTIPC9	10	49	RXTIPC9	receive tip port 9
transmit tip port 10	TXTIPC10	11	50	RXTIPC10	receive tip port 10
transmit tip port 11	TXTIPC11	12	51	RXTIPC11	receive tip port 11
transmit tip port 12	TXTIPC12	13	52	RXTIPC12	receive tip port 12
transmit tip port 13	TXTIPC13	14	53	RXTIPC13	receive tip port 13
transmit tip port 14	TXTIPC14	15	54	RXTIPC14	receive tip port 14
transmit tip port 15	TXTIPC15	16	55	RXTIPC15	receive tip port 15
not connected		17	56		not connected
not connected		18	57		not connected
not connected		19	58		not connected
not connected		20	59		not connected
transmit ring port 0	TXRINGC0	21	60	RXRINGC0	receive ring port 0
transmit ring port 1	TXRINGC1	22	61	RXRINGC1	receive ring port 1
transmit ring port 2	TXRINGC2	23	62	RXRINGC2	receive ring port 2
(Sheet 1 of 2)					

Table 2 (continued)
DS-1/E1 pin assignment

Description	Signal	Pin	Pin	Signal	Description
transmit ring port 3	TXRINGC3	24	63	RXRINGC3	receive ring port 3
transmit ring port 4	TXRINGC4	25	64	RXRINGC4	receive ring port 4
transmit ring port 5	TXRINGC5	26	65	RXRINGC5	receive ring port 5
transmit ring port 6	TXRINGC6	27	66	RXRINGC6	receive ring port 6
transmit ring port 7	TXRINGC7	28	67	RXRINGC7	receive ring port 7
transmit ring port 8	TXRINGC8	29	68	RXRINGC8	receive ring port 8
transmit ring port 9	TXRINGC9	30	69	RXRINGC9	receive ring port 9
transmit ring port 10	TXRINGC10	31	70	RXRINGC10	receive ring port 10
transmit ring port 11	TXRINGC11	32	71	RXRINGC11	receive ring port 11
transmit ring port 12	TXRINGC12	33	72	RXRINGC12	receive ring port 12
transmit ring port 13	TXRINGC13	34	73	RXRINGC13	receive ring port 13
transmit ring port 14	TXRINGC14	35	74	RXRINGC14	receive ring port 14
transmit ring port 15	TXRINGC15	36	75	RXRINGC15	receive ring port 15
not connected		37	76		not connected
not connected		38	77		not connected
not connected		39	78		not connected
(Sheet 2 of 2)					

Connecting the ethernet port

1   Obtain the following equipment:

- A regular RJ-45 ethernet cable with a male DB-8 connector and a 10 Base-T ethernet drop for a connection to a work station.

- A cross-connect RJ-45 ethernet cable with a male DB-8 connector for a connection to a 10 Base-T ethernet drop.

2   Connect the RJ-45 cable to the ethernet port located on the front panel of the Passport 8250 device.

The ethernet port is a female DB-8 RJ-45 connector.

3   Connect the other end of the RJ-45 cable to a 10 Base-T ethernet drop or work station.

Connecting the serial port

1   Obtain the following equipment:

- VT-100 terminal or a PC with terminal-emulation software

- Null modem RS-232 cable with a male DTE DB-9 connector with the connector on the other end of the cable appropriate for the serial port on the PC or terminal (most terminals or PCs use a male, DB-25 connector).

2   Connect the RS-232 cable to the serial port located on the front panel of the Passport 8250 device.

The serial port is a female DB-9 RS-232 connector configured as a data termination equipment (DTE).

3   Connect the other end of the RS-232 cable to the serial port on the VT-100 terminal or PC.

4   Ensure that the serial ports on the Passport 8250 device and the local host are configured as follows:

- bits per second: 9600

- data bits: 8

- parity: none

- stop bit: 1

- control flow: none

Connecting the ATM uplink port

> ⚠ **WARNING**
> **Network uplink cards A0768073 and A0760946 contain class 1 laser and network uplink cards A0760934 and A0780321 contain class 1 LED**
> Class 1 designated products are safe to view under normal conditions. Output of the device is invisible to the human eye. Avoid staring into the ends of fiber optical cables or connectors.
>
> For class 1 laser, the maximum output power is -8dBm and the emission wavelength is 1310nm. For class 1 LED, the maximum output power is -14dBm and the emission wavelength is 1310nm.
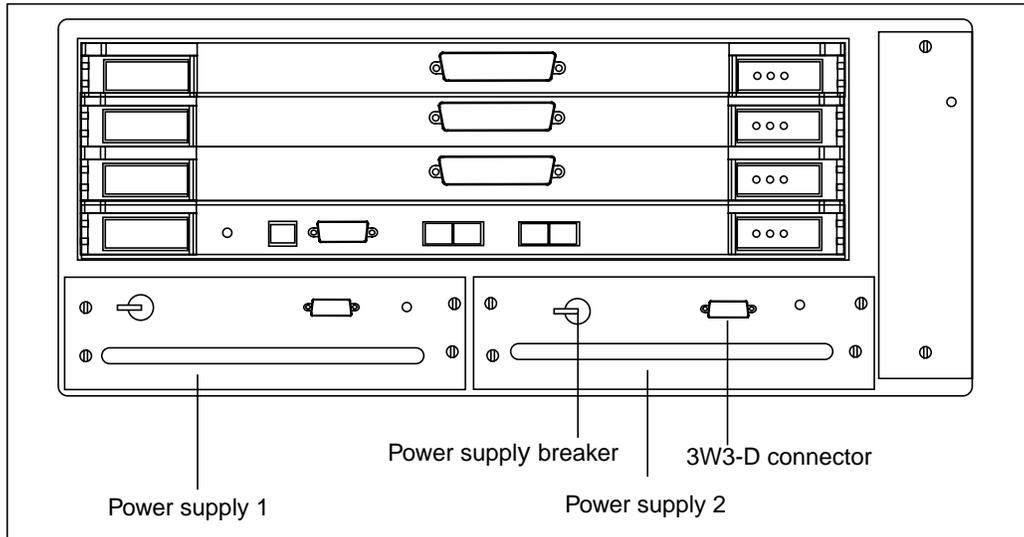
1   Obtain the following equipment:

- Multi-mode fiber optic cables with SC connectors with a typical range of 0-2 km

- Single-mode fiber optic cables with SC connectors with a typical range of 0-15 km

2   Connect the STM-1 or OC-3 single-mode or multi-mode fiber optic cable to port A and port B located on the front panel of the Passport 8250 device.

The port A and port B are female SC connectors.

3   Connect the other end of the fiber optic cable to the far end.

Connecting the dual power supply

See "Dual power supply" (page 34) for an illustration of the two power supply modules.

Figure 7
Dual power supply

Power supply breaker   3W3-D connector

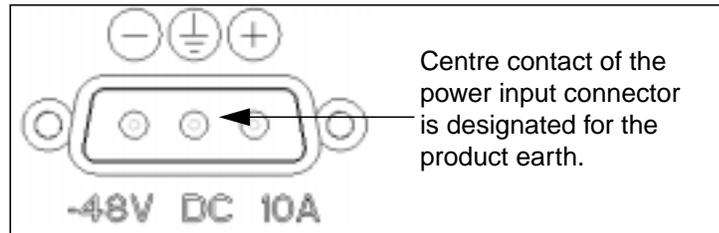Power supply 1   Power supply 2

CAUTION
Antistatic protection
Before handling the power supply, make sure that the
power is off and you are wearing antistatic protection.

---

1   Obtain the following equipment:

   • A -48 v DC power supply cable with 3W3-D connector for each power
     supply module.

   • Antistatic protection, such as an antistatic glove.

2   If the power supply module is supplied separately, insert the power supply
     module into an empty power supply slot and tighten the four securing
     screws with a screw driver.

     Verify that the securing screws cannot be loosened by hand.

3   Locate the 3W3-D type input connector on the power supply module.

The central contact is designated as the chassis ground.

Centre contact of the power input connector is designated for the product earth.

-48V DC 10A

4   Connect the -48v power supply cable with the male 3W3-D connector to the female 3W3-D connector.

Tighten the screws on the 3W3-D connector and verify that the connector is secured to chassis of power supply.

5   Repeat steps 1 to 4 for the other power supply module.

6   Connect the power supply modules with the recommended wiring harness to the branch circuit of the power distribution system.

7   Configure the electrical branch circuit providing power to the Passport as follows:

- A double-pole disconnect switch which isolates both the power feed and return conductors. A separate switch shall be provided for each separate power feed to the equipment.

- The branch circuit protection shall be located in the ungrounded conductor and be rated at no larger than 30A.

- The equipment protective grounding conductor shall be permanently connected to the protective earthing conductor in the building electrical distribution system.

8   Connect to the power unit with the recommended wiring harness to the branch circuit of the power distribution system.

9   Apply branch circuit power.

Securing the cables to the rack

Do not block air vents, field-replaceable modules, and LEDs with cables when connecting the cables to the ports.

Exit and secure all cables to the left as illustrated in "Cables left of chassis" (page 36) or underneath the chassis as illustrated in "Cables underneath chassis" (page 36).

Figure 8
Cables left of chassis

Figure 9
Cables underneath chassis

Chapter 4
Configuring the Passport 8250 for operations

This section provides the following procedures for configuring the Passport 8250 device for the operations:

1   "Logging into the CLI" (page 37)

2   "Configuring the Passport 8250 device for remote access" (page 38)

3   "Configuring the clocking scheme" (page 40).

Logging into the CLI

The first time you log into the CLI, you need to do the following:

*   Access the CLI using a terminal emulation device that is directly connected to the Passport 8250 device. The terminal emulation device must have a standard terminal emulation software.

*   Create a password. The password is used for CLI sessions, Telnet sessions, and FTP sessions.

    Note: The userid for CLI sessions, Telnet sessions, and FTP sessions is admin.

Starting the Passport 8250 device and logging into the CLI

1   Start a hyperterminal session on the local host.

2   Start the Passport 8250 device:

    a. For each power supply module, turn the power supply breaker to ON.

Breaker is off. Turn to on.
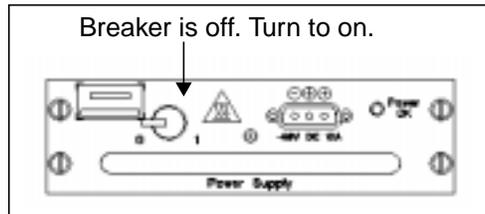
The LEDs on each power supply module is on.

Text is displayed on the hyperterminal screen.

3   From the hyperterminal session, stop the Passport 8250 device from starting-up:

    a. Press the return key within three seconds of the following text displaying on the screen:

    PRESS ANY KEY TO CONFIGURE BOOT PARAMETERS.

4   From the hyperterminal session, log into the CLI:

    a. Press the return key until the username prompt is displayed on the screen.

    b. At the username prompt, type admin.

    admin is the permanent userid for CLI sessions, Telnet sessions, and FTP sessions.

    c. At the password prompt, type a password between 8 and 12 characters.

Configuring the Passport 8250 device for remote access

Before you can Telnet to the CLI, FTP to the flash file system, and start the Passport 8250 device from a remote workstation, configure the boot parameters for the Passport 8250 device using the bootconfig command.

The syntax of the bootconfig command is:

    `bootconfig [set]`

where

`[set]`   modifies one or more boot parameters

See "Boot command parameters" (page 39) for the boot parameters you need to configure.

Table 3
Boot command parameters

boot parameter	Description
file name	The full pathname of the file loaded during a network boot.
inet on ethernet	The IP address of the Passport 8250 device with subnet mask.
inet on backplane	This field is not used.
host inet	The IP address of the remote host.
gateway inet	The IP address of the gateway node. Required if the remote host is on a different network.
user	The FTP userid of the remote host.
ftp password	The FTP password of the remote host the Passport 8250 device uses during a network boot.

Viewing the boot parameters

To display the existing boot parameters, Type the bootconfig command without the [set] parameter.

1   At the CLI prompt, type bootconfig:

bootconfig

The boot parameters are displayed.

Setting the boot parameters

1   At the CLI prompt, type bootconfig set:

bootconfig set

The boot parameters are displayed.

2   For file name, type the full pathname of the file the Passport 8250 device will load during a network boot.

3   For inet on ethernet, type the IP address of the Passport 8250 device with the subnet mask.

4   For host inet, type the IP address of the remote host.

5   If the remote host is on a different network, type the IP address of the gateway node at the gateway inet prompt.

6   For user, type the FTP userid of the remote host.

7   For ftp password, type the FTP password of the remote host.

8   Reboot the Passport 8250 device to save the boot parameters.

    `reboot`

    Note: After restarting the Passport 8250, you can log into the CLI only after ****BOOT COMPLETE, SYSTEM IS READY**** is displayed.

Configuring the clocking scheme

To configure the clocking scheme for the Passport 8250 device, select the source for the reference clock, and, if applicable, select the switching option using the clockconfig command.

The switching methods are the following:

- Internal. The clocking scheme is derived from the Passport 8250 device.

- External. The clocking scheme is derived from the ATM network off the ATM uplink port or a T1/E1 port on the Passport 8250. Select one of the following switching options:

  — Fixed. The clocking scheme is fixed permanently to the primary port. If there is a problem with the primary port, you need to change to the secondary port using the clockconfig command.

  — Automatic switching. The clocking scheme is temporarily fixed to the primary port. The Passport 8250 automatically switches from the primary port to the secondary port and, if needed, switches from the secondary port to internal.

  Note: We recommend that you select the device with the lower stratum clock as the clock source. The Passport 8250 has a stratum 4 clock.

The syntax of the clockconfig command is:

`clockconfig [set]`

where

`[set]`   configures the clocking scheme for the Passport 8250 device.

For details on the clockconfig parameters, see "Clockconfig command parameters" (page 41).

Table 4
Clockconfig command parameters

Parameter	Values	Definition
External Primary Board Number	0 = network board (default) 1 = service board in slot 1 2 = service board in slot 2 3 = service board in slot 3	The board that contains the primary port.
External Primary Port Number	When External Primary Board Number is 1, 2, or 3, 1 to 16 for the T1/E1 ports. When External Primary Board Number is 0, 3 for the ATM uplink port (default).	The primary port.
External Secondary Board Number	The same as the External Primary Board Number.	The board that contains the secondary port.
External Secondary Port Number	The same as the External Primary Port Number.	The secondary port.
(Sheet 1 of 2)		

Table 4 (continued)
Clockconfig command parameters

Parameter	Values	Definition
Admin Reference Clock Source	0 = Internal = The clock is derived from the Passport 8250. 1 = External Primary = clock derived from the primary port. 2 = External Primary Automatic Switching = Clock derived from the primary port. Switch to secondary port if problem with secondary port. 3 = External Secondary = Clock is derived from the secondary port.	The clock source.
Operational Reference Clock Source	Internal (default), ExternalPrimary, and ExternalSecondary.	The current clock source.

(Sheet 2 of 2)

Setting the clocking scheme to External Primary

1 Display the clockconfig parameters:

   ```
   clockconfig [set]
   ```

2 For External Primary Board Number, enter a board number.

3 For External Primary Port Number, enter a port number.

4 For External Secondary Board Number, press enter to accept the default value and move to the next field.

5 For External Secondary Port Number, press enter to accept the default value and move to the next field.

6 For Admin Reference Clock Source, enter 1 for ExternalPrimary:

   ```
   Admin Reference Clock Source: Internal 1
   ```

   Example
   The following is an example of setting port 10 on service board 2 as the primary port. The clocking scheme is set to ExternalPrimary.

```
[E1-1]: clockconfig set

External Primary Board Number (0 - 3) = 0 2
External Primary Port Number (1 - 16) = 3 10
External Secondary Board Number = 0
External Secondary Port Number = 3
Admin Reference Clock Source: Internal 1
```

Setting the clocking scheme to ExternalSecondary

1   Display the clockconfig parameters:

clockconfig set

2   For External Primary Board Number, press enter to accept the default value and move to the next field.

3   For External Primary Port Number, press enter to accept the default value and move to the next field.

4   For External Secondary Board Number, enter a board number.

5   For External Secondary Port Number, enter a port number.

6   For Admin Reference Clock Source, enter 3 for ExternalSecondary:

Admin Reference Clock Source: ExternalPrimary 3

Example
The following is an example of switching from the primary port configured in "Setting the clocking scheme to External Primary" (page 42) to a secondary port. The secondary port is the default ATM uplink port on the network board. The clocking scheme is ExternalSecondary.

```
[E1-1]: clockconfig set

External Primary Board Number (0 - 3) = 2
External Primary Port Number (1 - 16) = 10
External Secondary Board Number = 0
External Secondary Port Number = 3
Admin Reference Clock Source: ExternalPrimary 3
```

Setting the clocking scheme to External Primary Automatic Switching

1   Display the clockconfig parameters:

```
clockconfig [set]
```

2 For External Primary Board Number, enter a board number.

3 For External Primary Port Number, enter a port number.

4 For External Secondary Board Number, enter a board number.

5 For External Secondary Port Number, enter a port number.

6 For Admin Reference Clock Source, enter 2 for
ExternalPrimaryAutomaticSwitchOn:

```
Admin Reference Clock Source: Internal 2
```

Example
The following is example of setting the clocking scheme to
ExternalPrimaryAutomaticSwitchOn. The primary port is the ATM
uplink port on the network board and the secondary port is port 16 on
service board 3.

```
[E1-1]: clockconfig set

External Primary Board Number (0 – 3) = 0
External Primary Port Number (1 – 16) = 3
External Secondary Board Number = 0 3
External Secondary Port Number = 3 16
Admin Reference Clock Source: Internal 2
```

Setting the reference clock to internal

1 Display the clockconfig parameters:

```
clockconfig [set]
```

2 For External Primary Board Number, press enter to move to the next field.

3 For External Secondary Port Number, press enter to move to the next
field.

4 For External Secondary Board Number, press enter to move to the next
field.

5 For External Secondary Port Number, press enter to move to the next
field.

6 For Admin Reference Clock Source, enter 1 for internal.

Appendix A
Replacing hardware

This section provides instructions on how to replace hardware components on the Passport 8250 device. You can view the following procedures in this section:

- "Replacing a power supply module" (page 46)

- "Replacing a board module" (page 47)

- "Replacing the fan module" (page 49)

Figure 10
Field-replaceable modules

Replacing a power supply module

The Passport 8250 device is powered by two power supply modules. If a power supply module stops operating, you need to immediately replace it with a dummy power supply filler pack to ensure proper cooling and air flow. You also need to contact your Nortel Networks representative to order a new power supply module.
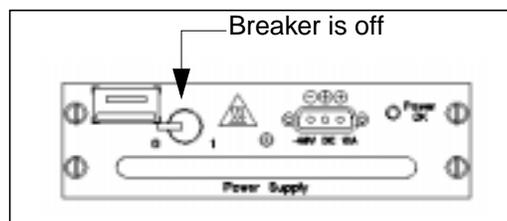
> ⚠ **WARNING**
> **Removing a power supply module**
> Turn the power off and let the unit cool before removing a power supply module.

1   For each power supply module, set the power supply breaker to off.

2   Disconnect the power feed at the power distribution source.

3   Using a screwdriver, loosen the four securing screws on the sides the power supply module.

4   Slide the power supply module or dummy power supply filler pack out of the slot.
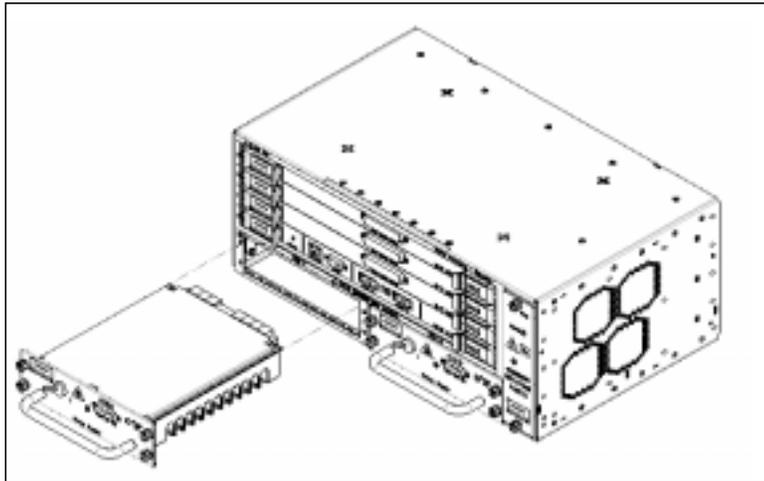

5   Insert the new power supply module or dummy power supply filler pack into the empty power supply slot.

6   Using a screw driver, tighten the four securing screws on the sides the power supply module. Verify that the securing screws cannot be loosened by hand.

7   For each power supply module, set the power supply breakers to on.

8   If you inserted a new power supply module, confirm that the power supply LED is to off.

If you inserted a dummy power supply filler pack, contact FLS immediately to order a new power supply module.

Replacing a board module

The Passport 8250 is equipped with 4 board slots, one slot for the network board and 3 slots for the service boards. See "Board slots" (page 48) for an illustration of the slots. If the Passport 8250 device has less than three service boards, dummy circuit card filler packs are needed for the empty board slots.

Figure 11
Board slots
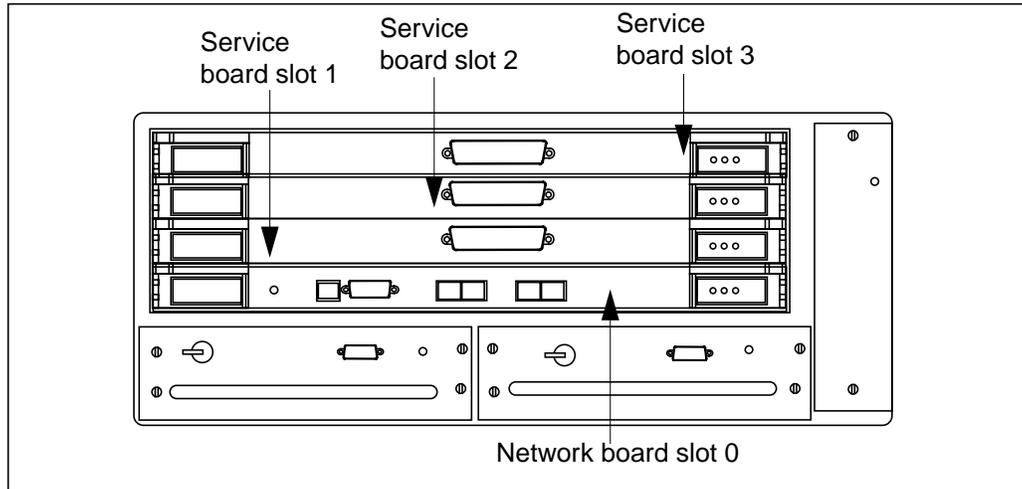
1   For each power supply module, set the power supply breaker to off.
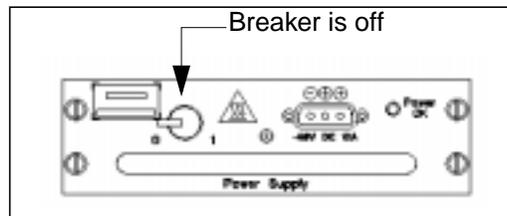
2   Flip the lock hatch at each end of the circuit board slot open.

3   Slide the network board or service board out of the circuit board slot.

4   Remove the new network board or service board from the package.

5   Insert the new network board or service board into the empty circuit board slot.

6   Snap the lock hatches at the ends of the circuit board slot close.

7   For each power supply module, set the power supply breakers to on.

Passport 8250 board guidelines

Use caution when handling, storing, and transporting circuit boards. Follow these guidelines:

- Do not stack or store boards without first replacing them in their antistatic material and shipping material.

- Do not to damage any parts when inserting the boards into packages.

- Do not store boards in areas where the relative humidity can exceed 85 percent or temperature can exceed 70 C.

- Handle boards by the faceplate. Do not touch electrical connections, pins, and soldered surfaces.

- Do not handle boards unless you are using appropriate antistatic protections such as an antistatic wrist strap. It is recommended that you use conductive carpet, conductive shoes, or heel grounders.

Replacing the fan module

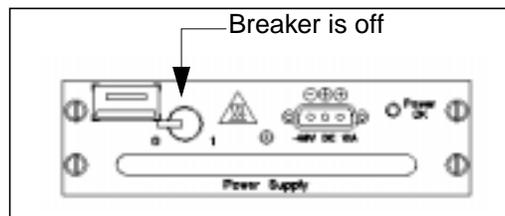If the fan module malfunctions, contact your Nortel Networks representative to order a new fan module.

WARNING
Rotating fan
Do not touch the fans immediately after removing the fan tray. The fans may continue to rotate several seconds after being removed.

1   For each power supply module, turn the power supply breaker to off.

Breaker is off

2   Loosen the two securing screws on the fan module.

3   Slide the fan tray out of the fan module slot.

The fans continue to rotate for a few seconds.

4 Remove the new fan module from the package.

5 Insert the new fan module into the empty fan module slot.

6 Tighten the two securing screws on the fan module.

7 For each power supply module, turn the power supply breakers to on.

8 Confirm that the fan LED is off.

Appendix B
LEDs

The LEDs located on the front panel of the Passport 8250 device. See
"Passport 8250 LEDS" (page 52) for an illustration of the LEDs and "LEDs
description" (page 53) for a description of the LEDs on the illustration.
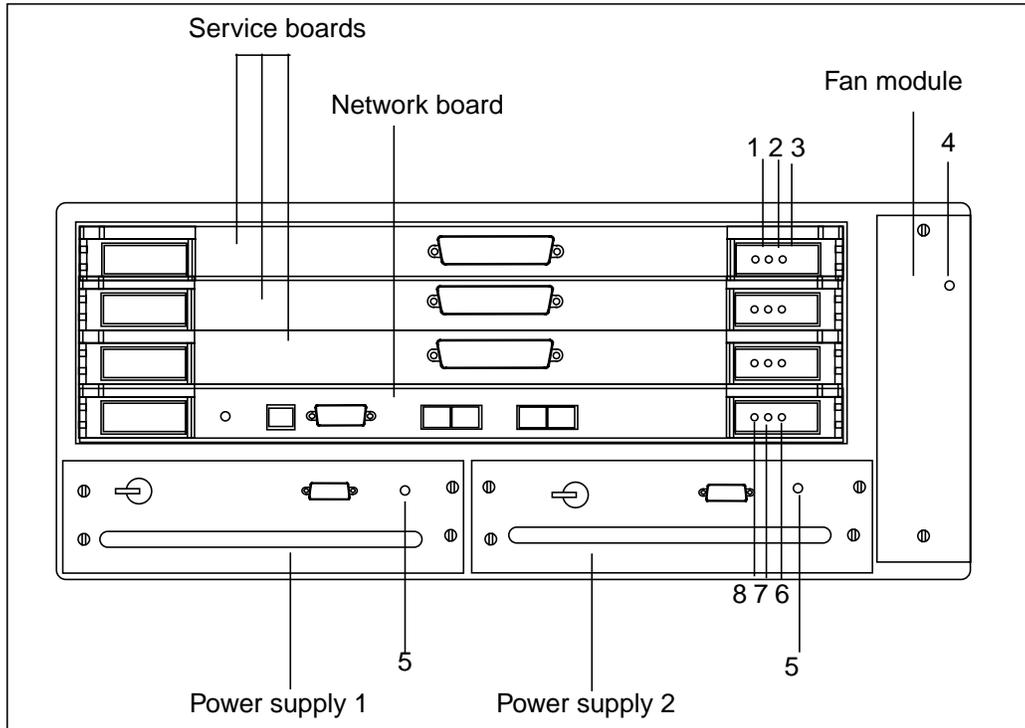
Figure 12
Passport 8250 LEDS

Service boards

Network board

Fan module

1 2 3   4

8 7 6

5   5

Power supply 1   Power supply 2

Table 5
LEDs description

Item	color	Description
1	green	on = system initialized and software loaded
2	red	on = All provisioned CES connections not working on the service board
3	amber	on = at least one, but not all, provisioned CES connection does not work on the service board
4	Red	on = fan failure
5	green	on = power available for power supply module
6	green	on = system initialized and software loaded
7	red	on = problem with physical connection of OC-3/STM-1 cable to OC-3/STM-1 port
8	amber	on = fault recorded in the fault log
		For details on the fault log, see NTP 241-5101-201, *Passport 8250 Command Line Interface Guide*.

Appendix C
Standards

This section describes the standards the Passport 8250 device meets. You can view the following topics in this section:

- "Product safety standards" (page 55)

- "Electromagnetic compatibility standards" (page 55)

- "Telecom standards" (page 56)

- "Thermal, mechanical, and power standards" (page 56)

- "Regulatory information standards" (page 56)

Product safety standards

The Passport 8250 device meets the following product safety standards:

- UL 1950, ed.3, 1995 (US)

- CSA C22.2 No. 950-M95 (Canada)

- EN 60950, 2nd Ed., 3rd Amt (EU)

- FDA 21 CFR (laser safety USA)

- EN60825-1, EN60825-2 (laser safety EU)

- Bellcore GR-1089-CORE

Electromagnetic compatibility standards

The Passport 8250 device meets the following electromagnetic compatibility standards:

- Unintentional Radiator (Emission)

— FCC Part 15, Class A (USA)

— ICES-003, Class A (Canada)

— EN 55022, Class A (Europe)

• Immunity, ESD, EFT (EU)

— EN50082-1

— EN300 386-2

— Bellcore GR-1089-CORE

Telecom standards

The Passport 8250 device meets the following telecom standards:

• FCC Pt 68 (US)

• IC CS-03, Issue 7 (Canada)

• TBR 13

• CTR 12

Thermal, mechanical, and power standards

The Passport 8250 device meets the following thermal, mechanical, and power standards:

• NEBS, GR-63-CORE level 3, airborne contaminants and descending temperature ramp excluded

Regulatory information standards

The Passport 8250 device meets the following regulatory information standards:

• "Federal Communications Commission (FCC)" (page 57)

• "Industry Canada Notice - Equipment attachment limitation" (page 57)

Federal Communications Commission (FCC)

The Passport 8250 device complies with Part 68 of the FCC rules. On the top of this equipment is a label that contains, among other information, the FCC registration. If requested, this information must be provided to the telephone company.

The Passport 8250 uses the following standard connections and codes:

- Service Order Code: 6.0F

- Facility Interface Code: 04DU9-BN, 04DU9-DN, 04DU9-KN, 04DU9-ISN

If the equipment causes harm to the telephone network, the telephone company will notify you in advance that temporarily discontinuance of service may be required. But if advanced notice isn't practical, the telephone company will notify the customer as soon as possible. Also you will be advised of your right to file a complaint with the FSS if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

Industry Canada Notice - Equipment attachment limitation

The Industry Canada Label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements documents. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation in service in some situations.

Repairs to certified equipment should be coordinated by representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

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